

A photograph of a BNSF locomotive, number 4450, in orange and yellow, stopped at a grade separation project site. The locomotive is on the left side of the frame. In the background, there are tall evergreen trees and a road with traffic lights. The scene is slightly hazy. The text "Barker Road / BNSF Railroad Grade Separation Project at State Route 290 Alternative Selection" is overlaid in white on the right side of the image.

# Barker Road / BNSF Railroad Grade Separation Project at State Route 290 Alternative Selection

March 27, 2018

John Hohman, PE, Deputy City Manager  
Bill Helbig, PE, City Engineer



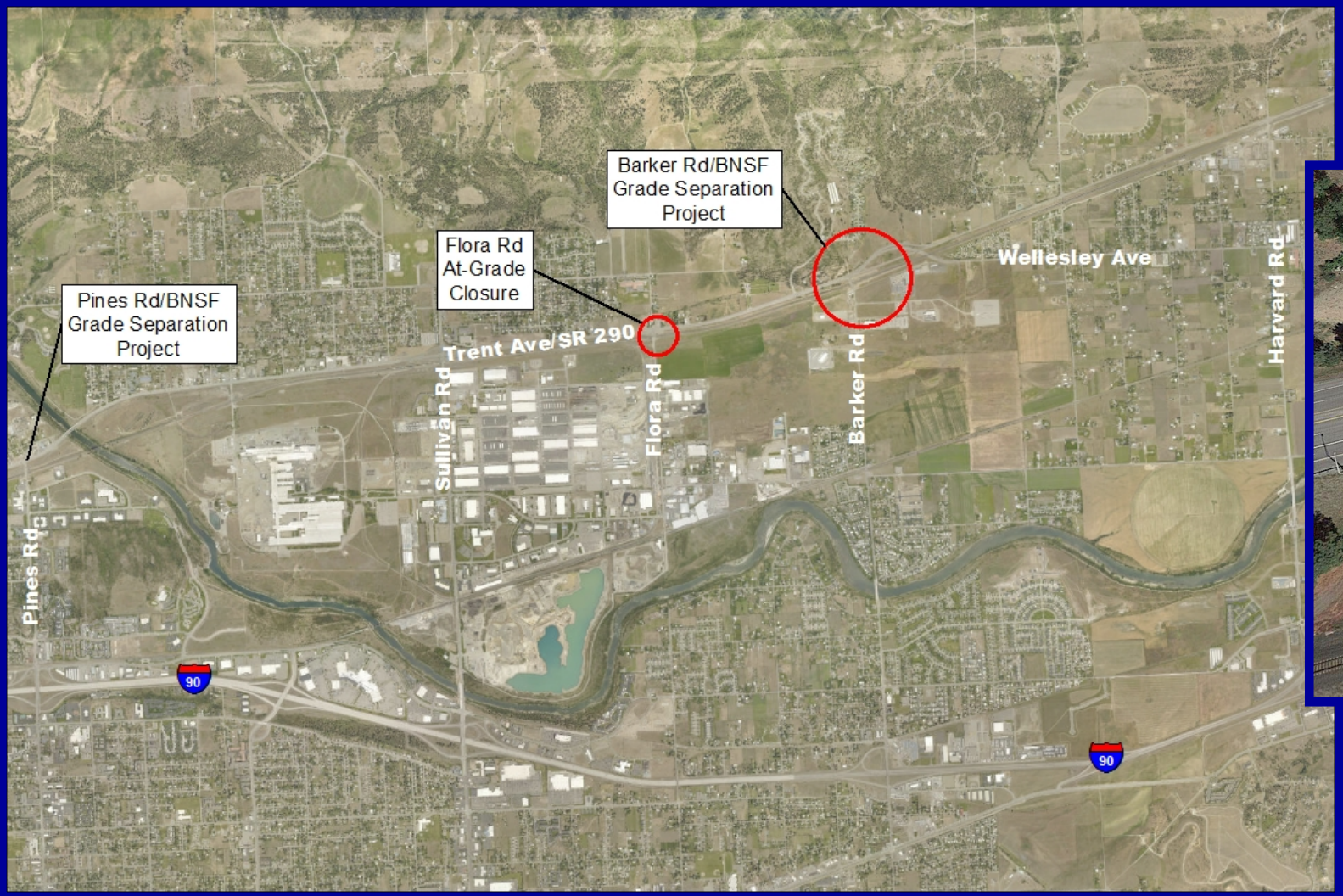
# Project Description

The Barker Road/BNSF Railroad Grade Separation Project replaces an existing at-grade crossing with an overpass of the railroad tracks and improves the intersection of Barker Road with State Route 290 (Trent Avenue).





# Project Location



# Local & Regional Benefits

- Improves Safety
- Eliminates At-Grade Railroad Crossing
- Improves Failing Level of Service
- Improves Emergency Access
- Reduces Train Noise
- Adds Non-Motorized Facilities
- Promotes Economic Development Activities
- Allows Industrial Growth of Area

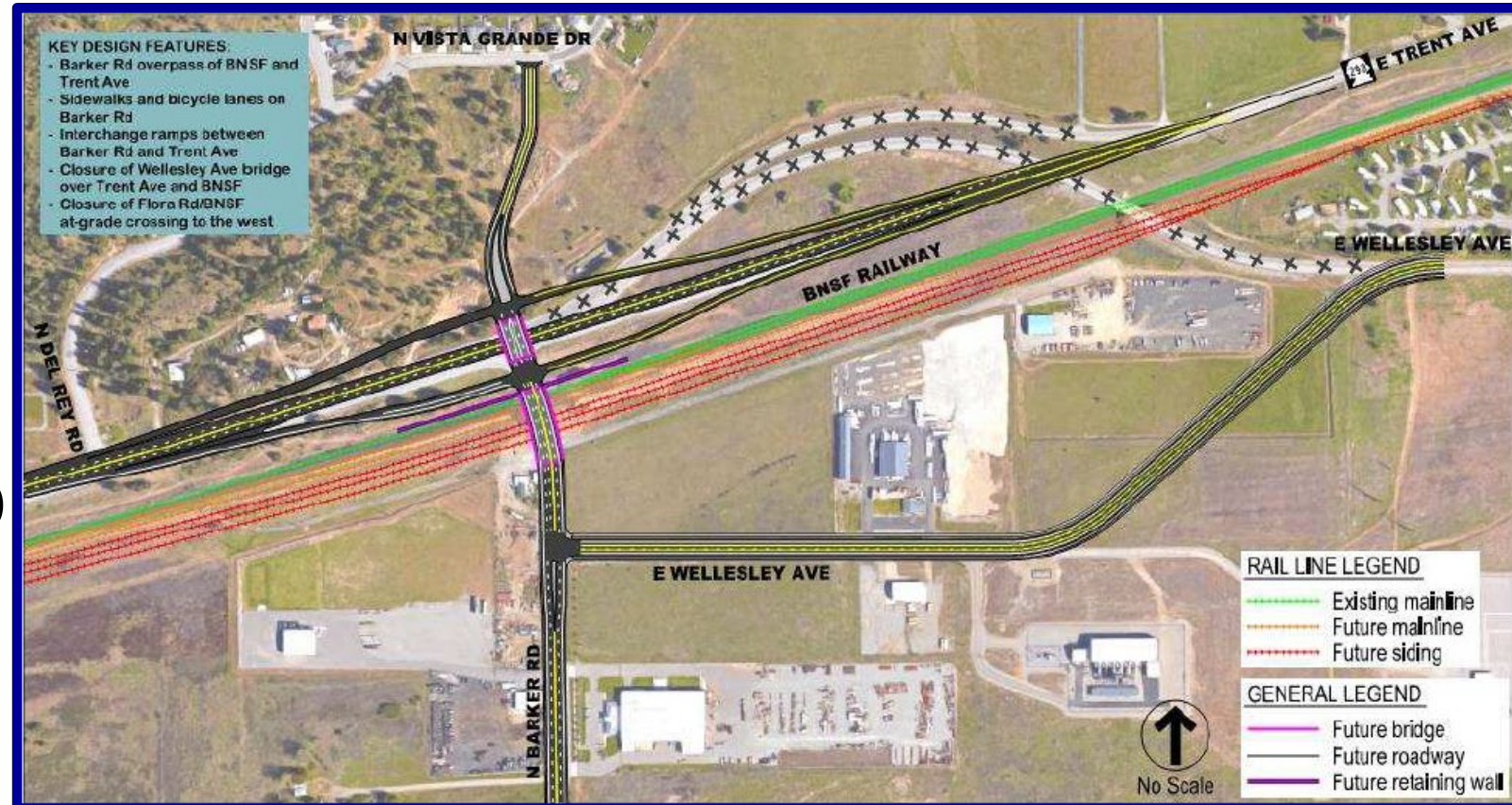
Traffic and Crash Data	
Existing Trains per Day	56
Vehicle ADT at Crossing	5,500
Existing Level of Service	F
Proposed Level of Service	A
Daily Train Whistles	112
Acres of Undeveloped Land	575
Total Vehicle Accidents Since 2012	17
Injury Accidents Since 2012	4
Property Damage Accidents Since 2012	13
Crash Risk (fatalities/year)	0.047





# Original Diamond Interchange Proposal

- Original Concept from SRTC's *Bridging the Valley* (2004)
- Revisited as Part of City's 2017 Alternative Evaluation
  - Not the Most Cost-Effective Option
  - Traffic Analysis does not Warrant the Use of Diamond Interchange
- Opinion of Probable Cost: Approximately \$45.3 Million (Assumes 2020 Construction)



# Design Considerations

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- Original *Bridging the Valley* (BTV) Concept Assumed BNSF and Union Pacific (UP) Collated in same Track Right-of-Way
  - Six Railroad Tracks in the BTV Concept
- UP and BNSF Decided not to Collate Tracks in the same Right-of-Way
- BNSF Plans to Install Second Track in 2019-2020
- Bridge Span will be Coordinated with BNSF to Account for Future Needs

# 2017 Alternatives Evaluation

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- Phase 1 – Alternatives Evaluation
  - Identify & Compare Several Scenarios
- All Scenarios Considered the Possible Impacts of Vehicle & Pedestrian Safety, Right-of-Way Needs, Traffic Modeling & Total Project Costs
- Roadway Alignment                      Evaluate Different Roadway Alignments Affecting Barker Road, SR-290, and Wellesley Avenue
- Overpass vs Underpass                Evaluate Grade Separation Alternatives for Barker Road & BNSF Railroad Tracks
- Signal vs Roundabout                    Intersection Control & Traffic Safety Analyses





# 2017 Alternatives Evaluation

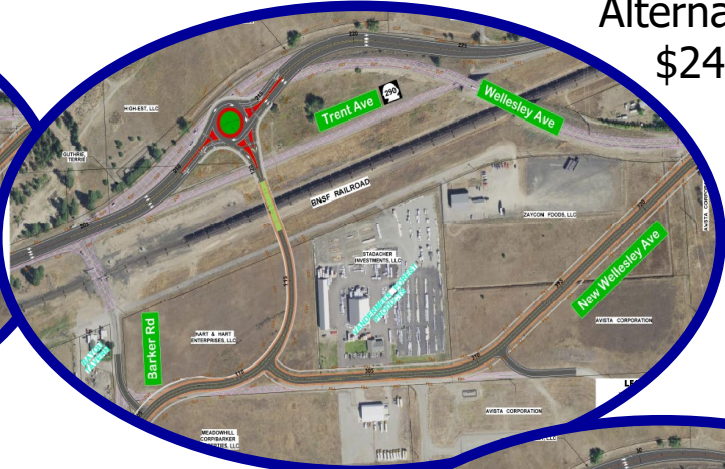
Alternative 1  
\$27.3M



Alternative 2  
\$19.8M



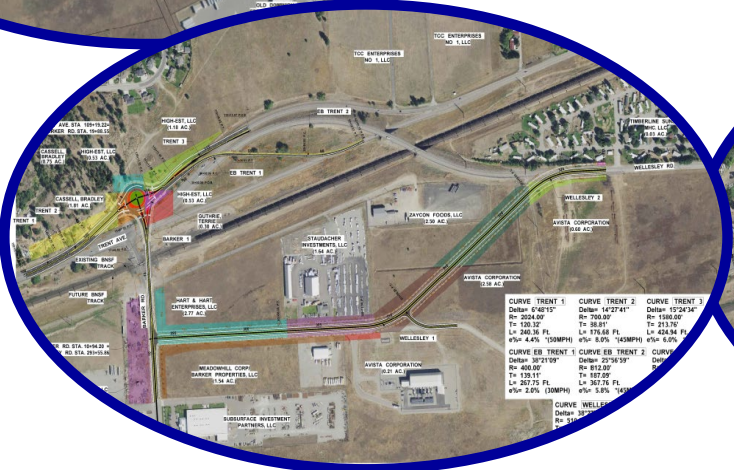
Alternative 3  
\$24.2M



Alternative 4  
\$11.4M



Alternative 6  
\$22.0M



CURVE TRENT 1	CURVE TRENT 2	CURVE TRENT 3
Center: 6427.41'	Center: 1427.41'	Center: 1727.41'
R= 3024.00'	R= 709.00'	R= 1060.00'
TA= 120.32'	TA= 18.81'	TA= 23.13'
LA= 178.68'	LA= 144.24'	LA= 144.24'
PIV= 4.4%	PIV= 8.0%	PIV= 6.0%
PIV= 4.4%	PIV= 8.0%	PIV= 6.0%
CURVE EB TRENT 1	CURVE EB TRENT 2	CURVE EB TRENT 3
Center: 3078.00'	Center: 2078.00'	Center: 1078.00'
R= 490.00'	R= 812.00'	R= 1124.00'
TA= 120.32'	TA= 182.00'	TA= 231.30'
LA= 157.75'	LA= 367.76'	LA= 367.76'
PIV= 3.0%	PIV= 5.0%	PIV= 5.0%
PIV= 3.0%	PIV= 5.0%	PIV= 5.0%
CURVE WELLESLEY		
Center: 1078.00'		
R= 300.00'		
TA= 120.32'		
LA= 144.24'		
PIV= 5.0%		
PIV= 5.0%		



Alternative 5  
\$19.0M

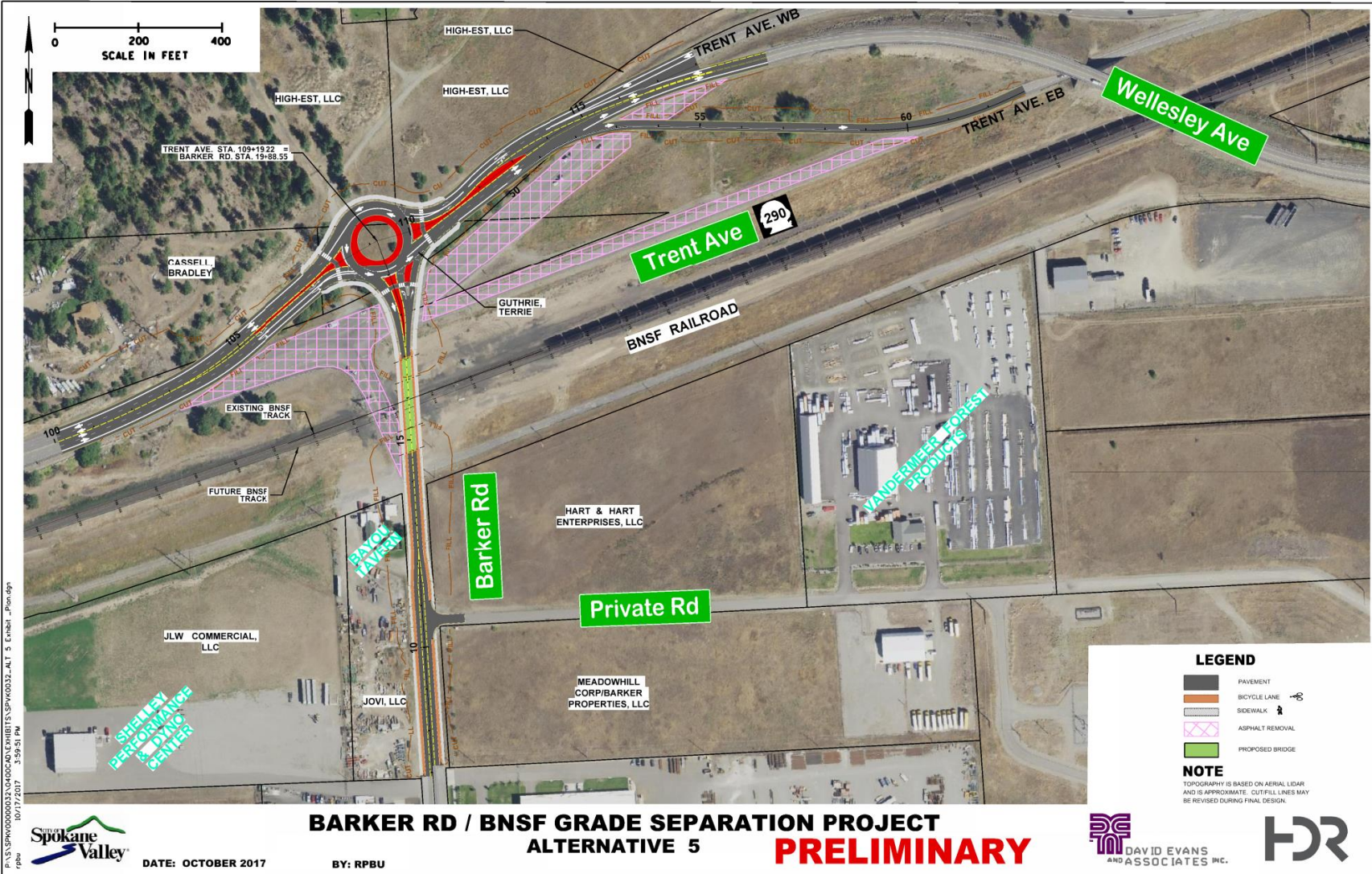
*Project Costs Assume  
2020 Construction*



# Preferred Alternative – Alternative 5

January 2018

- Basis of Design (WSDOT Requirement)
- 3-Leg Roundabout
- Does NOT Preclude Connection to North
- Estimated Total Cost: \$19.0 Million (2020 Construction)



# Public Outreach

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- 7 Council Meetings – *Bridging the Valley* Concept
- 9 Council Meetings – Alternative Designs including Roundabouts
- 8 Formal Public Presentations to Outside Groups & Agencies
  - Presentation of Alternatives
- 1 Formal Public Meeting – Over 120 in Attendance
  - Most Favor the Project – Alternative 1 or 5
  - Highland Estates Concerned with Impacts to Del Rey Drive
- Numerous Meetings with Local Business & Agencies
  - Police & Fire Departments
  - School Districts
  - Local Businesses & Property Owners



# Project Funding

2018 Estimated Total Project Cost:	\$	19,000,000	
Secured Funds:			
Federal Earmark	\$	720,000	
WA State FMSIB (20%)	\$	3,800,000	**
WA State Legislative Appropriation (Must Spend by 06/19)	\$	1,500,000	*
National Highway Freight Program (NHFP) (Obligate CN by 09/20)	\$	6,000,000	*
BNSF Contribution (Estimated)	\$	300,000	
TIGER 2017 (Obligate by 09/20 & Spend by 09/25)	\$	9,020,149	*
City Funds Budgeted	\$	3,630,000	
<b>Total Secured Funds</b>	<b>\$</b>	<b>24,970,149</b>	

\* Funds with Critical Timeframes (Shown in Red)

\*\* FMSIB Award – 20% of Total Cost, \$10M Limit, Construction Only



# Summary

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- *Bridging the Valley* Interchange Concept not a Practical Solution
- Coordinated Planning Efforts with WSDOT, Stakeholders, Public
- Full Suite of Alternatives Developed & Evaluated
- Identified a Fiscally Responsible and Attainable Project Solution
- Ensures Adequate Infrastructure for all Anticipated Growth
- Existing and Future Permitting Depends on the City Moving Quickly with a Solution
- Alternative 5 – Validated by Recent Grant Awards Totaling over \$15 million



# Next Steps

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- Complete Conceptual Work (Early 2018)
  - Alternatives Evaluation Report
  - Receive Basis of Design approval from WSDOT
- Seek Council Approval for Phase 2 Consultant Contract – April 10<sup>th</sup>
  - Design Documents
  - Right-Of-Way Services
  - Construction Documents
- Complete Phase 2 Elements (2018 – 2020)
- Phase 3
  - Construction (2020 – 2021)
  - Project Closeout (2022)

# Questions?

March 27, 2018

